REPORT ON INSTALLATION OF GROUND WATER MONITORING WELLS

DESA INDUSTRIES
PARK FOREST, ILLINOIS

JANUARY, 1989

PREPARED BY:

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PROJECT NO.: 7032

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DESA INDUSTRIES
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GROUND WATER MONITORING WELL INSTALLATION

1.0 INTRODUCTION

This report documents the field activities and presents data obtained during the installation of ground water monitoring wells at DESA Industries. The facility is now Continental Midland and is located at 25000 South Western Avenue, Park Forest, Illinois.

1.1 Purpose of Study

This study was initiated to determine if a perched water table exists on the site and in conformance with the April 26, 1988, letter from AMCA International to Michael Ohm of the Illinois Attorney General's Office.

Information to be gathered from this study included water monitoring results and data on subsurface geologic conditions, as no well logs were found for the 2 existing deep wells at the site. Further, published documents (Piskin and Bergstrom, 1976 and Schlicht, et al., 1976) indicate the potential for perched water tables in the upper clay tills in the area of the plant.

1.2 Field Activities Conducted

The only field activities conducted were those listed under the Hydrogeological Investigation (Section 3.3) in the Phase II Work Plan, prepared by ERM-North Central and dated November 4, 1986. Further, the activities only encompass the areas pertinent to 1) soil borings to define the subsurface stratigraphy, and 2) monitoring wells constructed to intercept any actual or potential aquifer zones. In addition, selected soil and water samples were collected and sent to a laboratory for analysis.

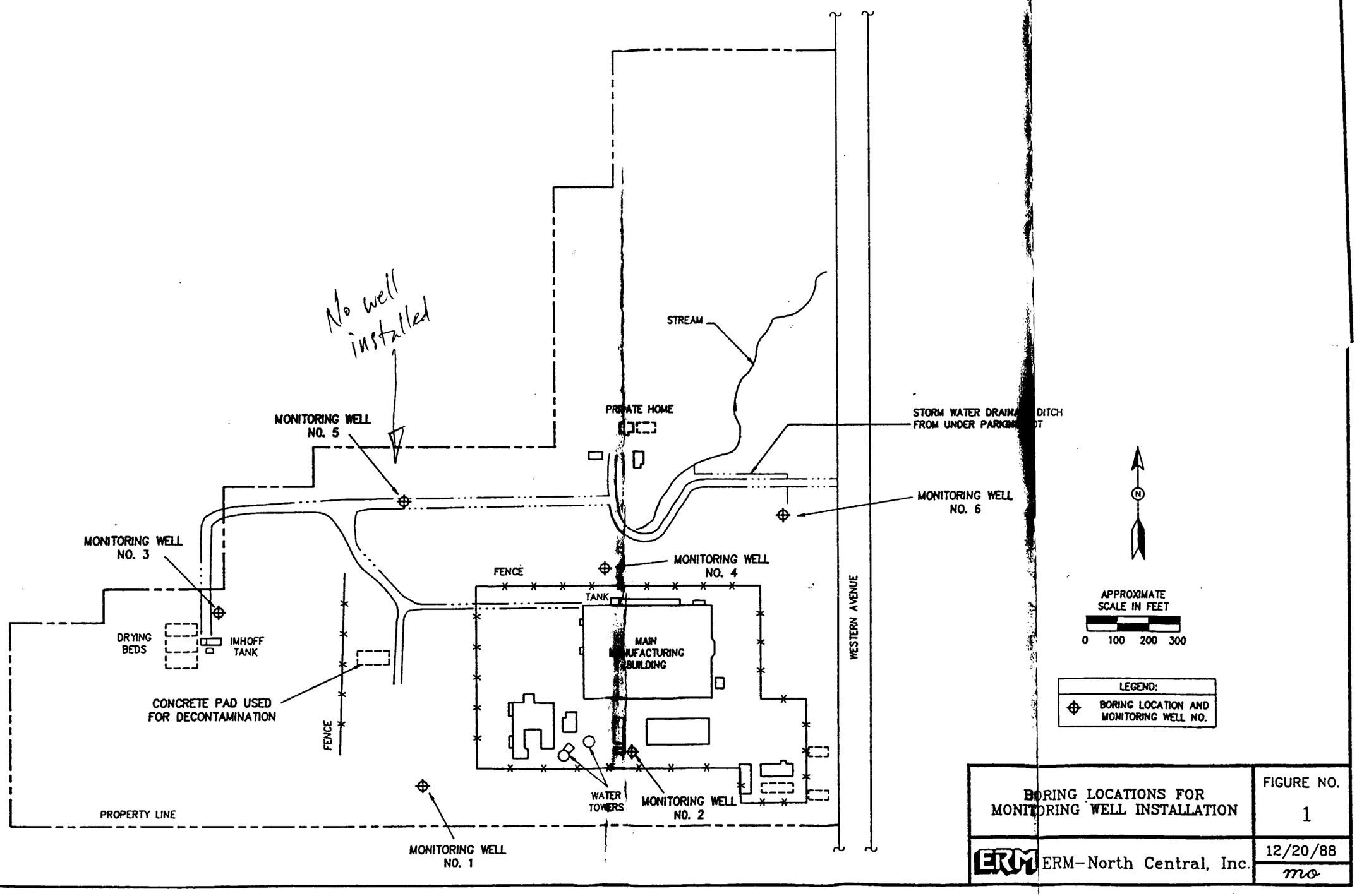
2.0 BORINGS AND SOIL SAMPLES

2.1 Location and Field Activities

The boring locations are shown on Figure 1 with the numerical designation used for this study. These locations were chosen to encompass most of the facility to include areas where possible soil contamination may exist. Boring No. 1 (Monitoring Well No. 1) was located on the upgradient and upslope side of the property, so that the largest section of stratigraphy would be intercepted.

Boring No. 1 was extended into competent bedrock. The other borings were drilled to a depth of 30 feet. This depth was chosen, after Boring No. 1 was completed, as a depth sufficient to intercept any perched water tables.

The chronology of field events is summarized on Table 1. Some time delays were encountered due to the wearing of protective clothing and excessive heat.



BORING LOCATIONS FOR MONITORING WELL INSTALLATION	FIGURE NO. 1
ERM ERM–North Central, Inc.	12/20/88 mo

TABLE 1

CHRONOLOGY OF FIELD EVENTS

Date	Field Activity
6/3/88	Safety Meeting for field personnel. Mobilization of Drill Rig and Field Equipment. Decontamination Pad constructed.
6/6/88	Decontamination of drill rig and equipment. Drill and Sample W-1 to 28.5' (hollow stem auger).
6/7/88	Drill and Sample W-1 to 50' (hollow stem auger). Set up for Mud Rotary Drilling.
6/8/88	Drill and Sample W-1 to 105' (mud rotary).
6/9/88	Drill and Sample W-1 to 120' (mud rotary). Install W-1 at 80'. Develop W-1 and barrel drilling fluids.
6/10/88	Finish collecting drilling fluids. Finish construction of W-1. Drum well cuttings. Flush silt from W-1. Decontamination of drill rig and equipment.
6/13/88	Drill and Sample W-3 to 20'.
6/14/88	Drill and Sample W-3 to 30'. Install W-3 at 10'. Finish W-3 construction and barrel the well cuttings.
6/15/88	Decontamination of drill rig and equipment. Drill and Sample W-5 to 20'.

TABLE 1 (continued)

CHRONOLOGY OF FIELD EVENTS

Date	Field Activity
6/16/88	Drill and Sample W-5 to 30'. Abandon W-5. Decontamination of drill rig and equipment. Drill and Sample W-6 to 25'.
6/17/88	Drill and Sample W-6 to 30'. Install W-6 at 23.5'. Finish W-6 construction and barrel the well cuttings. Decontamination of drill rig and equipment.
6/20/88	Drill and Sample W-4 to 10'. Equipment delay.
6/21/88	Samples taken to laboratory.
6/22/88	Drill and Sample W-4 to 30'. Install W-4 at 27.5'. Finish W-4 construction and barrel the well cuttings. Decontamination of drill rig and equipment.
6/23/88	Drill and Sample W-2 to 30'. Install W-2 to 15'. Finish W-2 construction and barrel the well cuttings.
6/24/88	Decontamination of drill rig and all tools and equipment. Disassemble and barrel decontamination pad.
6/29/88	Water samples taken from W-1; W-2, W-3 and W-6.

2.2 Split Spoon Samples

Split spoon samples were taken continuously to 30 feet at a 2 foot depth interval for the first 10 feet and, thereafter, at 2-1/2 foot intervals until termination of the boring. For Well No. 1, however, continuous split spoons were taken to 40 feet and, thereafter, every 5 feet until termination. Drill logs were recorded by an on-site geologist and "blow counts" recorded. The drill logs are included as Appendix A.

2.3 Field Screening of Soil Samples

A portion of each split spoon sample was placed in a Mason jar for field screening. The headspace technique was used, utilizing an HNu photoionization meter. Readings were recorded in Vppm. A complete listing of these readings is given on the drill logs in Appendix A. Table 2 shows, the highest HNu reading for each hole with the corresponding depth interval.

2.4 Laboratory Results of Soil Samples

Following the field screening, soil samples for laboratory analysis were selected based partially on the field screening and partially on the visual appearance of the soil. The complete laboratory report for these soil samples are included as Appendix B. Laboratory results are also summarized on Table 3.

TABLE 2

HIGHEST HNu FIELD READING AT EACH BORING LOCATION

Boring Location No.	Highest HNu Reading (Vppm)	Depth From Surface (feet)
1	0	---
2	0	---
3	0	---
4*	400	6 - 8
5	1.8	0 - 2
6	1.0	6 - 8

* A second high reading of 200 Vppm was recorded at the 20-22 foot depth.

TABLE 3

SUMMARY OF ANALYTICAL RESULTS FOR SOIL SAMPLES (in ug/g) ppm

VOLATILE COMPOUNDS	BORING DESIGNATION 2-B	4-E	5-A	6-E
Acrolein	<10	<10	<10	<10
Acrylonitrile	<10	<10	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	<1.0	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0	<1.0
Bromomethane	<10	<10	<10	<10
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0	<1.0
Chloroethane	<10	<10	<10	<10
2-Chloroethylvinyl Ether	<1.0	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0
Chloromethane	<10	<10	<10	<10
Dibromochloromethane	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0
Ethyl Benzene	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	11.6	1.4	<1.0
Trichlorofluoromethane	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	<10	<10	<10	<10
Xylenes, Total	<1.0	<1.0	<1.0	<1.0
Solids, Total in %	86.29	88.54	76.57	79.53

3.0 MONITORING WELLS

3.1 Location

In accordance with the Phase II Work Plan, any soil borings that intercept a potential water bearing unit were to have a monitoring well installed. A monitoring well was installed in each boring location except Boring Location No. 5, as no water bearing units were intercepted. Boring Location No. 5 was abandoned in accordance with the Phase II Work Plan. As shown on the drill logs, Appendix A, potential water bearing units were encountered in the other borings. These units were quite variable in depth and thickness, as indicated on the Well Construction Sheets (referenced below). Monitoring wells were installed in the same location as the borings, as shown on Figure 1.

3.2 Well Construction

Monitoring wells were constructed as shown on Figure 3.4 of the Phase II Work Plan. Individual well construction details are provided in Appendix C, along with elevations. Elevations were estimated from a contour map of the site. Efforts were made to install the shallowest well possible, and to seal off lower units, to prevent any possible migration of any hazardous materials to lower aquifer units. Well depths and water levels are given on Table 4.

TABLE 4

SUMMARY OF WELL DEPTHS, WATER LEVELS AND FIELD MEASUREMENTS

	Depth Measurements (Ft)			Field Measurements			
	Total Depth	Depth To Water	M.P. To Ground(1)	pH	Temp °C°	Specific Cond.(uMHO)	Draw Down(ft)(2)
Well #1	80.9	72.1	2.3	7.2	12.8	950	0
Well #2	16.9	5.7	1.9	7.0	17.7	9,800	6.8
Well #3	13.0	8.5	2.4	6.8	14.0	900	1.7
Well #4	29.5	29.4	2.2	NA	NA	NA	NA
Well #6	26.8	12.0	2.5	7.0	14.0	1,110	4.7

(1) Distance from measuring point (M.P.) at top of PVC casing to ground surface.

(2) After 3 volumes were bailed, and samples were taken.

3.3 Laboratory Results of Ground Water Samples

Following the completion of all drilling activities, each well was sampled. Per the Phase II Work Plan, three volumes of water were bailed to develop each well. Samples were collected in sample containers provided by NET Midwest, Inc., the analytical laboratory used for this study. The complete laboratory report is included as Appendix B. Table 5 is a summary of the ground water analyses.

As can be seen from Table 5, one ground water sample, from Monitoring Well No. 3, indicated the presence of PCB-1254, at 4.8 ug/l. As PCBs are relatively insoluble, and no other organics were detected in the ground water sample, the presence of PCBs was suspect. Accordingly, a second ground water sample was obtained from Monitoring Well No. 3 on November 3, 1988. This ground water sample was analyzed for PCBs by NET; the laboratory results show no PCBs in the second sample. The laboratory report for this second ground water sample from Monitoring Well No. 3 is included as Appendix D, along with the sample Chain-of-Custody form.

4.0 COMPLIANCE WITH HEALTH AND SAFETY

4.1 Safety Meeting

Any individual performing any on-site activity attended the ERM Health and Safety meeting, and signed a form indicating attendance. These documents are presented in Appendix E. Also included in Appendix E are the Monitoring Well Installation and Decontamination Audit Checklists. These forms were compiled by ERM's PSO officer during unannounced visits to the site.

TABLE 5

SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES

VOLATILE COMPOUNDS (in ug/l)	WELL DESIGNATION			
	WELL-1	WELL-2	WELL-3	WELL-6
Acrolein	<10	<10	<10	<10
Acrylonitrile	<10	<10	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	<1.0	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0	<1.0
Bromomethane	<10	<10	<10	<10
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0	<1.0
Chloroethane	<10	<10	<10	<10
2-Chloroethylvinyl Ether	<1.0	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0
Chloromethane	<10	<10	<10	<10
Dibromochloromethane	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0
Ethyl Benzene	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0
Trichlorofluoromethane	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	<10	<10	<10	<10
Xylenes, Total	<1.0	<1.0	<1.0	<1.0

TABLE 5 (continued)

SUMMARY OF ANALYTICAL RESULTS
FOR GROUND WATER SAMPLES

METALS (in ug/l)	WELL DESIGNATION WELL-1	WELL-2	WELL-3	WELL-6
Cyanide, Total	<0.001	0.002	<0.001	<0.002
Fats, Oils & Grease (FOG)	7	8	4	104
Arsenic	0.004	<0.001	<0.001	0.004
Barium	0.10	0.40	0.06	0.15
Cadmium	<0.001	<0.001	<0.001	<0.001
Chromium, Total	<0.001	<0.001	<0.001	<0.001
Copper	0.003	0.026	0.005	<0.001
Lead	0.03	0.25	0.07	<0.01
Magnesium	62	151	53	59
Mercury	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	0.08	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001	<0.001
Zinc	<0.001	0.031	0.011	<0.001
PCBs (in ug/l)				
PCB-1016	<1.0	<1.0	<1.0	<1.0
PCB-1221	<1.0	<1.0	<1.0	<1.0
PCB-1232	<1.0	<1.0	<1.0	<1.0
PCB-1242	<1.0	<1.0	<1.0	<1.0
PCB-1248	<1.0	<1.0	<1.0	<1.0
PCB-1254	<1.0	<1.0	4.8	<1.0
PCB-1260	<1.0	<1.0	<1.0	<1.0

4.2 Safety Equipment

Personal safety equipment worn on-site were as follows:

1. Hard hat
2. Safety Glasses
3. Tyvek suite (gray polycoated and white)
4. Neoprene or nitrite gloves
5. Chemically resistant work boot
6. Neoprene overboot
7. Respirators

Respirators were donned during the drilling of Monitoring Well No. 4 when ambient air readings were in excess of 5 Vppm as measured by the HNu photoionization meter.

4.3 Decontamination and Decontamination Wastes

A decontamination pad was constructed on-site located as shown on Figures 1 through 3 as the "Concrete Pad" area. The pad was constructed by laying 6 mil visqueen over an existing concrete pad and building a berm around the edges. The drill rig and all tools used were decontaminated using a steam cleaner. All waste waters were vacuumed and placed in 55 gallon drums.

Protective clothing worn each day was collected at the end of the day and at lunch. These items were placed into plastic garbage bags and placed in the plant's general refuse. Also, meals were eaten away from the exclusion and decontamination zones.

Drill cuttings collected at each boring location were placed in 55 gallon drums. Also, at Monitoring Well No. 1, where drilling fluids were used, all the fluids pumped out were placed in 55 gallon drums. A total of 38, 55 gallon drums were filled with these items.

Each well installed has a locked metal protective cover which was cemented 2 feet below the ground surface.

APPENDIX A
DRILL LOGS

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 1 Total Depth 123.5' Diameter 7" & 4"

Surface Elevation 754.3' Water Level: Initial 68' 24-Hrs 70'

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method 7" Auger & 4" Rotary

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/6;6/8/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	Page 1 of 5 DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		3 5 7 10	0	A	CL - Clay, silty, slightly sandy, brown, stiff, slightly moist, occasional gravel
		3 4 5 8	0	B	
		4 8 11 15	0	C	4.0' Gray mottling
5		3 10 15 18	0	D	
		3 6 9 15	0	E	
10		4 10 20 20	0	F	11.0' 1" Sand Seam, Red Mottling
		4 14 20 25	0	G	14.0' 3" Sand Seam, silty, very moist
15		5 10 16 18	0	H	
		4 10 15 18	0	I	18.5' Gray clay - no mottling - moist to very moist
20		6 9 12 14	0	J	
		5 6 8 7	0	K	
25		6 9 17 16	0	L	26.0' SM - Sand, very silty, gray, moderately moist 27.2' (See description on top of next page)

ERM-NORTH CENTRAL, INC. DRILLING LOG

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Drilling Company Fox Drilling Drilling Method 7" Auger & 4" Rotary

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/6;6/8/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		15			SM - CL - ML Sand, silty, clay, silt, interbedded 2" to 4" layers, gray, stiff to moderately dense, moist, occasional gravel
		11			
		18			
30		7	0	M	29.0' CL - Clay, silty, very sandy, slightly gravelly, soft to stiff, moist to very moist
		11			
		20			
		5			
		9	0	N	32.5' 4" Sand and gravel seam, very moist
		12			
		7			
		15			
		4	0	O	34.0' SC - Sand, slightly clayey, gray, moderately dense, very moist, fine- to medium-grained grain size
35		9			
		15			
		15			
		22			
		12			
		28	0	P	
		26			
		22			38.0' CL - Clay, sandy, silty,occasional gravel, occasional small sand seams, gray, stiff, moist to very moist
		16			
		3			
		7	0	Q	
40		10			
		14			
		22			
		6			
		6	0	R	
		9			
45		14			
		12			
					47.0' SP - Sand, occasional gravel, gray, very dense, slightly moist, little to no fines, fine- to medium-grain size
		18	0	S	
		32			
50					
					52.0' CL - Clay, very silty, sandy, occasional small sand lenses, gray, stiff, very moist
		7			
		7	0	T	
		14			

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 1 Total Depth 123.5' Diameter 7" and 4"

Surface Elevation 754.3' Water Level: Initial 68' 24-Hrs 70'

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method 7" Auger & 4" Rotary

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/6;6/8/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
55		17 18			56.0' Change from 7" hollow stem augers to 4" mud rotary
					59.0' SP - Sand, gravelly, gray to variable color, very dense, slightly moist, fine- to medium-grain size, little to no fines, occasional small lenses of clayey silt and silty clay
60		50 75	0	U	
65		60 100 /4	0	V	
					67.0' Less gravel
					68.0' Water
70		50 75 100/5	0	W	
75		50 75 97	0	X	75.0' Lenses of coarser sand-medium to coarse grain size
80		50 106	0	Y	

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, ILL W.O. Number: AMCAJP7032

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Surface Elevation 754.3' Water Level: Initial 68' 24-Hrs 70'

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method 7" Auger & 4" Rotary

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/6;6/8/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
85		50 75 100	0	Z	
90		88 75 99	0	AA	
95		37 105	0	BB	
100		45 65 65 75	0	CC	
105		30 55 55 52	0	DD	

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 1 Total Depth 123.5' Diameter 7" and 4"

Surface Elevation 754.3' Water Level: Initial 68' 24-Hrs 70'

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method 7" Auger & 4" Rotary

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/6;6/8/88

DEPTH	pH	BLOWS	HNU (Vppm)	Sample Number	DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
110		35 60 54 54	0	EE	
					112.0' 4" to 6" gravel lense
					113.5' BR - Highly weathered shale bedrock, interbedded with lenses of GP, GC, SP, CL & SM; some fragments of limestone and dolomite
115		33 32 60 64	0	FF	
120		80 100/2	0	GG	120.0' Competent shale bedrock
		100/1	NO SAMPLE		123.5' Bottom of boring
125					

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 2 Total Depth 30' Diameter 11"

Surface Elevation 753.5' Water Level: Initial 4' 24-Hrs 3'10"

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/23/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	Page 1 of 2 — DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		25 20 17 10	0	A	Fill - Gravel-Clay Mix, variable color, dense, slightly moist
		4 7			1.8' Fill - Clay, silty, sandy, black on top to variable color, stiff, moist
		8 7	0	B	3.0' Fill - Sand, occasional small clay lense, brown with occasional black streaks, very little fines, loose, very moist
5		1 1 2 1	0	C	4.0' Saturated
		1 blow for 2'	0	D	
		2 3 5 6	0	E	9.0' Fill - Clay, sandy, silty, gray, very moist, stiff
10		8 1 7 13	0	F	10.5' Fill - Sand, very gravelly 11.5' CL - Clay, sandy, silty, occasional gravel, gray, very moist, stiff to hard
		16 21 6 12	0	G	13.0' Moist
15		18 24 33 9			
		17 22 28 36	0	H	
		4 10 15 17	0	I	
20		24 4 8 14	0	J	
		19 21 3 5	0	K	
25		10 13 15 6			
		8 16 18 17	0	L	27.5' Bottom of auger boring

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 2 Total Depth 30' Diameter 11"

Surface Elevation 753.5' Water Level: Initial 4' 24-Hrs 3'10"

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/23/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	Page 2 of 2 DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
30		6 10 14 19	0	M	30.0' Bottom of drive sample

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 3 Total Depth 30' Diameter 11"

Surface Elevation 744.8' Water Level: Initial 1' 24-Hrs 7.5'

Screen: Dia 2" Length 5' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/13;6/14/88

DEPTH	pH	BLOWS	HNU (Vppm)	Sample Number	DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		3 4 4 5	0	A	1.0' ML - Topsoil, silt, sandy, black, dry, moderately dense CL - Clay, very silty, sandy, gray mottled brown, wet, soft to stiff
		1 2 2 4	0	B	
		2 2 1 3	0	C	4.0' SP - Sand, very slightly silty, brown to gray, wet, loose 4.6' CL - Clay, very silty, sandy, gray, wet, soft to stiff
5		1 2 3 5	0	D	7.0' Moist, moderately stiff
		2 4 7 9	0	E	8.0' 2" Sand seam, wet
10		5 8 10 14 15 2	0	F	11.0' Very stiff, moist
		5 7 9 13	0	G	
15		6 7 8 9 14 5	0	H	
		9 14 17 22	0	I	
20		14 11 9 14 20 5	0	J	20.0' 3" Sand seam, moist 21.0' 2" Clayey gravel seam, moist
		11 11 12 37 5	0	K	23.0' 4" Gravel seam, moist
25		12 14 16 20 6	0	L	
					27.5' Bottom of auger boring

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 3 Total Depth 30' Diameter 11"

Surface Elevation 744.8' Water Level: Initial 1' 24-Hrs 7.5'

Screen: Dia 2" Length 5' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/13;6/14/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	Page 2 of 2 DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		13 20 25 33	0	M	
30					30.0' Bottom of drive sample

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 4 Total Depth 30' Diameter 2"

Surface Elevation 748.2' Water Level: Initial 22' 24-Hrs 26'3"

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/20;6/22/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		9 9 11	25	A	Fill - Clay, sandy, silty, occasional gravel, brown, stiff, slightly moist to moist, some metal fragments
		11 5 15	50	B	
		11 12 1			
5		5 7	24	C	
		8 3			6.0' CL - Clay, silty, slightly sandy, brown with gray mottling, stiff to hard, moist
		7 10 16	400	D	
		7 14 18	250	E	
10		22 8			10.0' Gray
		14 20 27	300	F	
		36 7 14			
		20 24	300	G	
15		27 5			15.0' Small sand lenses, 1/2" to 2" to 17', very moist
		8 12 15	350	H	
		50/3 9			17.2' Small gravel lenses, 1" to 2" to 20', very moist
		16 50 28	180	I	
20		35 11 21			
		21 26	200	J	
		23 15 18			22.0' 2" Sand seam, wet 23.0' 4" Sand seam, dry
		27 22	25	K	
25		15 6			24.5' SC-SM - Sand, very clayey, very silty, occasional gravel, gray, moderately dense, very moist to wet
		8 10 9	0.6	L	
		10 2			27.5' Bottom of auger boring

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 4 Total Depth 30' Diameter 2"

Surface Elevation 748.2' Water Level: Initial 22' 24-Hrs 26'3"

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/20;6/22/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		5 6 8 10	0.1	M	
30					30.0' Bottom of drive sample

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 5 Total Depth 30' Diameter 11"

Surface Elevation 756.6' Water Level: Initial NA 24-Hrs NA

Screen: Dia NA Length NA Slot Size NA

Casing: Dia NA Length NA Elevation ____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/15/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		15 10	1.8	A	Fill - Gravel (factory cinders) clayey, with glass, metal, etc., variable color, dry, dense
		7 18			2.0'
		4 5	0.2	B	CL - Clay, silty, sandy, with occasional gravel, brown with gray and reddish brown mottling, slightly moist,stiff to hard
		7 10			
5		4 8	0.3	C	
		13 15			
		7 12	0.2	D	
		17 18			
		7 17	0	E	
		39 50			
10		12 18	0	F	
		32 40			
		52 5	0	G	
		13 23			
		30 35			
15		9 16	0	H	
		25 30			
		37 6	0	I	
		12 20			
		30 40			
20		13 23	0	J	21.0' Gray
		30 33			22.5' Slightly softer, medium moist
		43 6	0	K	
		14 18			24.5' 1" Sand seam, dry
25		22 27			
		9 18	0	L	
		16 22			27.5'

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 5 Total Depth 30' Diameter 11"

Surface Elevation 756.6' Water Level: Initial NA 24-Hrs NA

Screen: Dia NA Length NA Slot Size NA

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/15/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	Page 2 of 2 DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		12	0	M	
		12 17			
30		17			30.0' Bottom of drive sample

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 6 Total Depth 30' Diameter 11"

Surface Elevation 743.5' Water Level: Initial 13.5' 24-Hrs 9.5'

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/16/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	Page 1 of 2 DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		4 8 8 9	0	A	Fill - Clay, sandy, silty, variable color to brown, moist to very moist, stiff, rubble on top, pieces of metal and concrete
		6 7 7 8	0	B	
		1 2 2 3	0	C	4.0' Very moist, soft to stiff
5		1 13 29 8	0	D	6.5' Black factory slag
		1 1 4 4	0	E	8.0' CL - Clay, silty, black, soft to stiff, veyr moist
10		1 1 2 2	0	F	10.5' CL - Clay, silty, sandy, with occasional gravel, gray with brown mottling, soft, very moist
		1 2 2 5	0	G	12.5' Gray 13.5' 4" Sand seam, SP, wet
15		2 4 8 10 12	0	H	15.5' Stiff to very stiff
		2 6 7 10	0	I	
20		12 4 6 10 12 13	0	J	
		3 7 9 11	0	K	
25		20 3 7 11 17 17	0	L	
		4			27.5' Bottom of auger boring

ERM-NORTH CENTRAL, INC. DRILLING LOG

Project AMCA Owner Desa Industries

Location Park Forest, IL W.O. Number: AMCAJP7032

Well Number 6 Total Depth 30' Diameter 11"

Surface Elevation 743.5' Water Level: Initial 13.5' 24-Hrs 9.5'

Screen: Dia 2" Length 10' Slot Size 0.020

Casing: Dia NA Length NA Elevation _____ Type NA

Drilling Company Fox Drilling Drilling Method Auger

Sampling Method Split Spoon Log By Mike Roche Date Drilled 6/16/88

DEPTH	pH	BLOWS	HNu (Vppm)	Sample Number	Page 2 of 2 DESCRIPTION/SOIL CLASSIFICATION Color, Texture, Structures
		8			
		10	0	M	
		15			
30		16			30.0' Bottom of drive sample

APPENDIX B
LABORATORY REPORT

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180

Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-21-88

Sample No.: 64962

Sample Description: 6-E
AMCA

Date Taken: 06-16-88 1345

Date Received: 06-17-88 1600

VOLATILE COMPOUNDS

Acrolein	<10.	ug/g
Acrylonitrile	<10.	ug/g
Benzene	<1.0	ug/g
Bromodichloromethane	<1.0	ug/g
Bromoform	<1.0	ug/g
Bromomethane	<10.	ug/g
Carbon tetrachloride	<1.0	ug/g
Chlorobenzene	<1.0	ug/g
Chloroethane	<10.	ug/g
2-Chloroethylvinyl ether	<1.0	ug/g
Chloroform	<1.0	ug/g
Chloromethane	<10.	ug/g
Dibromochloromethane	<1.0	ug/g
1,2-Dichlorobenzene	<1.0	ug/g
1,3-Dichlorobenzene	<1.0	ug/g
1,4-Dichlorobenzene	<1.0	ug/g
1,1-Dichloroethane	<1.0	ug/g
1,2-Dichloroethane	<1.0	ug/g
1,1-Dichloroethene	<1.0	ug/g
cis-1,2-Dichloroethene	<1.0	ug/g
trans-1,2-Dichloroethene	<1.0	ug/g
1,2-Dichloropropane	<1.0	ug/g
cis-1,3-Dichloropropene	<1.0	ug/g
trans-1,3-Dichloropropene	<1.0	ug/g
Ethyl benzene	<1.0	ug/g

Results on a dry weight basis.

W. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180

Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-21-88

Sample No.: 64962

Sample Description: 6-E
AMCA

Date Taken: 06-16-88 1345

Date Received: 06-17-88 1600

Methylene chloride	<5.0	ug/g
1,1,2,2-Tetrachloroethane	<1.0	ug/g
Tetrachloroethene	<1.0	ug/g
Toluene	<1.0	ug/g
1,1,1-Trichloroethane	<1.0	ug/g
1,1,2-Trichloroethane	<1.0	ug/g
Trichloroethene	<1.0	ug/g
Trichlorofluoromethane	<1.0	ug/g
Vinyl chloride	<10.	ug/g
Xylenes, Total	<1.0	ug/g

Results on a dry weight basis.

W. Mottashed

William H. Mottashed, Manager
Bartlett Division

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Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
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Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-21-88

Sample No.: 64961

Sample Description: 5-A; 5
AMCA

Date Taken: 06-15-88 1130

Date Received: 06-15-88 1645

Solids, Total	76.57	%

Results on a dry weight basis.

William H. Mottashed, Manager
Bartlett Division

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ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-21-88

Sample No.: 64961

Sample Description: 5-A; 5
AMCA

Date Taken: 06-15-88 1130

Date Received: 06-15-88 1645

VOLATILE COMPOUNDS

Acrolein	<10.	ug/g
Acrylonitrile	<10.	ug/g
Benzene	<1.0	ug/g
Bromodichloromethane	<1.0	ug/g
Bromoform	<1.0	ug/g
Bromomethane	<10.	ug/g
Carbon tetrachloride	<1.0	ug/g
Chlorobenzene	<1.0	ug/g
Chloroethane	<10.	ug/g
2-Chloroethylvinyl ether	<1.0	ug/g
Chloroform	<1.0	ug/g
Chloromethane	<10.	ug/g
Dibromochloromethane	<1.0	ug/g
1,2-Dichlorobenzene	<1.0	ug/g
1,3-Dichlorobenzene	<1.0	ug/g
1,4-Dichlorobenzene	<1.0	ug/g
1,1-Dichloroethane	<1.0	ug/g
1,2-Dichloroethane	<1.0	ug/g
1,1-Dichloroethene	<1.0	ug/g
cis-1,2-Dichloroethene	<1.0	ug/g
trans-1,2-Dichloroethene	<1.0	ug/g
1,2-Dichloropropane	<1.0	ug/g
cis-1,3-Dichloropropene	<1.0	ug/g
trans-1,3-Dichloropropene	<1.0	ug/g
Ethyl benzene	<1.0	ug/g

Results on a dry weight basis.

W. Mottashed

William H. Mottashed, Manager
Bartlett Division

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ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-21-88

Sample No.: 64961

Sample Description: 5-A; 5
AMCA

Date Taken: 06-15-88 1130

Date Received: 06-15-88 1645

Methylene chloride	<5.0	ug/g
1,1,2,2-Tetrachloroethane	<1.0	ug/g
Tetrachloroethene	<1.0	ug/g
Toluene	<1.0	ug/g
1,1,1-Trichloroethane	<1.0	ug/g
1,1,2-Trichloroethane	<1.0	ug/g
Trichloroethene	1.4	ug/g
Trichlorofluoromethane	<1.0	ug/g
Vinyl chloride	<10.	ug/g
Xylenes, Total	<1.0	ug/g

Results on a dry weight basis.

W. Mottashed

William H. Mottashed, Manager
Bartlett Division

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Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

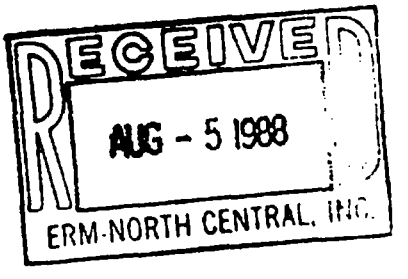
Sample No.: 65506

Sample Description: Well 2
AMCA

Date Taken: 06-29-88 0915

Date Received: 06-30-88 0840

Cyanide, Total	0.002	mg/L
Fats, Oils & Grease (FOG)	8.	mg/L
Arsenic	<0.001	mg/L
Barium	0.40	mg/L
Cadmium	<0.001	mg/L
Chromium, Total	<0.001	mg/L
Copper	0.026	mg/L
Lead	0.25	mg/L
Magnesium	151.	mg/L
Mercury	<0.0001	mg/L
Molybdenum	<0.01	mg/L
Nickel	0.08	mg/L
Selenium	<0.001	mg/L
Zinc	0.031	mg/L



William H. Mottashed, Manager
Bartlett Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
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Tel: (312) 289-3100
Fax: 312-289-4180

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65506

Sample Description: Well 2
AMCA

Date Taken: 06-29-88 0915

Date Received: 06-30-88 0840

VOLATILE COMPOUNDS

Acrolein	<10.	ug/L
Acrylonitrile	<10.	ug/L
Benzene	<1.0	ug/L
Bromodichloromethane	<1.0	ug/L
Bromoform	<1.0	ug/L
Bromomethane	<10.	ug/L
Carbon tetrachloride	<1.0	ug/L
Chlorobenzene	<1.0	ug/L
Chloroethane	<10.	ug/L
2-Chloroethylvinyl ether	<1.0	ug/L
Chloroform	<1.0	ug/L
Chloromethane	<10.	ug/L
Dibromochloromethane	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,3-Dichlorobenzene	<1.0	ug/L
1,4-Dichlorobenzene	<1.0	ug/L
1,1-Dichloroethane	<1.0	ug/L
1,2-Dichloroethane	<1.0	ug/L
1,1-Dichloroethene	<1.0	ug/L
cis-1,2-Dichloroethene	<1.0	ug/L
trans-1,2-Dichloroethene	<1.0	ug/L
1,2-Dichloropropane	<1.0	ug/L
cis-1,3-Dichloropropene	<1.0	ug/L
trans-1,3-Dichloropropene	<1.0	ug/L
Ethyl benzene	<1.0	ug/L
Methylene chloride	<5.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	ug/L
Tetrachloroethene	<1.0	ug/L
Toluene	<1.0	ug/L
1,1,1-Trichloroethane	<1.0	ug/L

William H. Mottashed, Manager
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ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65506

Sample Description: Well 2
AMCA

Date Taken: 06-29-88 0915

Date Received: 06-30-88 0840

	VOLATILE COMPOUNDS	
1,1,2-Trichloroethane	<1.0	ug/L
Trichloroethene	<1.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
Vinyl chloride	<10.	ug/L
Xylenes, Total	<1.0	ug/L
PCB's		
PCB-1016	<1.0	ug/L
PCB-1221	<1.0	ug/L
PCB-1232	<1.0	ug/L
PCB-1242	<1.0	ug/L
PCB-1248	<1.0	ug/L
PCB-1254	<1.0	ug/L
PCB-1260	<1.0	ug/L

William H. Mottashed, Manager
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ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65507

Sample Description: Well 1
AMCA

Date Taken: 06-29-88 1130

Date Received: 06-30-88 0840

Cyanide, Total	<0.001	mg/L
Fats, Oils & Grease (FOG)	7.	mg/L
Arsenic	0.004	mg/L
Barium	0.10	mg/L
Cadmium	<0.001	mg/L
Chromium, Total	<0.001	mg/L
Copper	0.003	mg/L
Lead	0.03	mg/L
Magnesium	62.	mg/L
Mercury	<0.0001	mg/L
Molybdenum	<0.01	mg/L
Nickel	<0.01	mg/L
Selenium	<0.001	mg/L
Zinc	<0.001	mg/L

William H. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
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850 West Bartlett Road
Bartlett, IL 60103
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ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65507

Sample Description: Well 1
AMCA

Date Taken: 06-29-88 1130

Date Received: 06-30-88 0840

VOLATILE COMPOUNDS

Acrolein	<10.	ug/L
Acrylonitrile	<10.	ug/L
Benzene	<1.0	ug/L
Bromodichloromethane	<1.0	ug/L
Bromoform	<1.0	ug/L
Bromomethane	<10.	ug/L
Carbon tetrachloride	<1.0	ug/L
Chlorobenzene	<1.0	ug/L
Chloroethane	<10.	ug/L
2-Chloroethylvinyl ether	<1.0	ug/L
Chloroform	<1.0	ug/L
Chloromethane	<10.	ug/L
Dibromochloromethane	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,3-Dichlorobenzene	<1.0	ug/L
1,4-Dichlorobenzene	<1.0	ug/L
1,1-Dichloroethane	<1.0	ug/L
1,2-Dichloroethane	<1.0	ug/L
1,1-Dichloroethene	<1.0	ug/L
cis-1,2-Dichloroethene	<1.0	ug/L
trans-1,2-Dichloroethene	<1.0	ug/L
1,2-Dichloropropane	<1.0	ug/L
cis-1,3-Dichloropropene	<1.0	ug/L
trans-1,3-Dichloropropene	<1.0	ug/L
Ethyl benzene	<1.0	ug/L
Methylene chloride	<5.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	ug/L
Tetrachloroethene	<1.0	ug/L
Toluene	<1.0	ug/L
1,1,1-Trichloroethane	<1.0	ug/L

William H. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180
Formerly: Applied Analytical

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65507

Sample Description: Well 1
AMCA

Date Taken: 06-29-88 1130

Date Received: 06-30-88 0840

VOLATILE COMPOUNDS		
1,1,2-Trichloroethane	<1.0	ug/L
Trichloroethene	<1.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
Vinyl chloride	<10.	ug/L
Xylenes, Total	<1.0	ug/L
PCB's		
PCB-1016	<1.0	ug/L
PCB-1221	<1.0	ug/L
PCB-1232	<1.0	ug/L
PCB-1242	<1.0	ug/L
PCB-1248	<1.0	ug/L
PCB-1254	<1.0	ug/L
PCB-1260	<1.0	ug/L

William H. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4780
Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65508

Sample Description: Well 3
AMCA

Date Taken: 06-29-88 1315

Date Received: 06-30-88 0840

Cyanide, Total	<0.001	mg/L
Fats, Oils & Grease (FOG)	4.	mg/L
Arsenic	<0.001	mg/L
Barium	0.06	mg/L
Cadmium	<0.001	mg/L
Chromium, Total	<0.001	mg/L
Copper	0.005	mg/L
Lead	0.07	mg/L
Magnesium	53.	mg/L
Mercury	<0.0001	mg/L
Molybdenum	<0.01	mg/L
Nickel	<0.01	mg/L
Selenium	<0.001	mg/L
Zinc	0.011	mg/L

William H. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65508

Sample Description: Well 3
AMCA

Date Taken: 06-29-88 1315

Date Received: 06-30-88 0840

VOLATILE COMPOUNDS

Acrolein	<10.	ug/L
Acrylonitrile	<10.	ug/L
Benzene	<1.0	ug/L
Bromodichloromethane	<1.0	ug/L
Bromoform	<1.0	ug/L
Bromomethane	<10.	ug/L
Carbon tetrachloride	<1.0	ug/L
Chlorobenzene	<1.0	ug/L
Chloroethane	<10.	ug/L
2-Chloroethylvinyl ether	<1.0	ug/L
Chloroform	<1.0	ug/L
Chloromethane	<10.	ug/L
Dibromochloromethane	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,3-Dichlorobenzene	<1.0	ug/L
1,4-Dichlorobenzene	<1.0	ug/L
1,1-Dichloroethane	<1.0	ug/L
1,2-Dichloroethane	<1.0	ug/L
1,1-Dichloroethene	<1.0	ug/L
cis-1,2-Dichloroethene	<1.0	ug/L
trans-1,2-Dichloroethene	<1.0	ug/L
1,2-Dichloropropane	<1.0	ug/L
cis-1,3-Dichloropropene	<1.0	ug/L
trans-1,3-Dichloropropene	<1.0	ug/L
Ethyl benzene	<1.0	ug/L
Methylene chloride	<5.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	ug/L
Tetrachloroethene	<1.0	ug/L
Toluene	<1.0	ug/L
1,1,1-Trichloroethane	<1.0	ug/L

William H. Mottashed, Manager
Bartlett Division

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180

Formerly: Aquatab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65508

Sample Description: Well 3
AMCA

Date Taken: 06-29-88 1315

Date Received: 06-30-88 0840

VOLATILE COMPOUNDS		
1,1,2-Trichloroethane	<1.0	ug/L
Trichloroethene	<1.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
Vinyl chloride	<10.	ug/L
Xylenes, Total	<1.0	ug/L
PCB's		
PCB-1016	<1.0	ug/L
PCB-1221	<1.0	ug/L
PCB-1232	<1.0	ug/L
PCB-1242	<1.0	ug/L
PCB-1248	<1.0	ug/L
PCB-1254	4.8	ug/L
PCB-1260	<1.0	ug/L

William H. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65509

Sample Description: Well 6
AMCA

Date Taken: 06-29-88 1415

Date Received: 06-30-88 0840

Cyanide, Total	<0.002	mg/L
Fats, Oils & Grease (FOG)	104.	mg/L
Arsenic	0.004	mg/L
Barium	0.15	mg/L
Cadmium	<0.001	mg/L
Chromium, Total	<0.001	mg/L
Copper	<0.001	mg/L
Lead	<0.01	mg/L
Magnesium	59.	mg/L
Mercury	<0.0001	mg/L
Molybdenum	<0.01	mg/L
Nickel	<0.01	mg/L
Selenium	<0.001	mg/L
Zinc	<0.001	mg/L

William H. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180
(Formerly: Aquatech, Inc.)

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65509

Sample Description: Well 6
AMCA

Date Taken: 06-29-88 1415

Date Received: 06-30-88 0840

VOLATILE COMPOUNDS

Acrolein	<10.	ug/L
Acrylonitrile	<10.	ug/L
Benzene	<1.0	ug/L
Bromodichloromethane	<1.0	ug/L
Bromoform	<1.0	ug/L
Bromomethane	<10.	ug/L
Carbon tetrachloride	<1.0	ug/L
Chlorobenzene	<1.0	ug/L
Chloroethane	<10.	ug/L
2-Chloroethylvinyl ether	<1.0	ug/L
Chloroform	<1.0	ug/L
Chloromethane	<10.	ug/L
Dibromochloromethane	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,3-Dichlorobenzene	<1.0	ug/L
1,4-Dichlorobenzene	<1.0	ug/L
1,1-Dichloroethane	<1.0	ug/L
1,2-Dichloroethane	<1.0	ug/L
1,1-Dichloroethene	<1.0	ug/L
cis-1,2-Dichloroethene	<1.0	ug/L
trans-1,2-Dichloroethene	<1.0	ug/L
1,2-Dichloropropane	<1.0	ug/L
cis-1,3-Dichloropropene	<1.0	ug/L
trans-1,3-Dichloropropene	<1.0	ug/L
Ethyl benzene	<1.0	ug/L
Methylene chloride	<5.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	ug/L
Tetrachloroethene	<1.0	ug/L
Toluene	<1.0	ug/L
1,1,1-Trichloroethane	<1.0	ug/L

William H. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL ENVIRONMENTAL TESTING, INC.

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Fax: 312-289-4180

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

08-04-88

Sample No.: 65509

Sample Description: Well 6
AMCA

Date Taken: 06-29-88 1415

Date Received: 06-30-88 0840

	VOLATILE COMPOUNDS	
1,1,2-Trichloroethane	<1.0	ug/L
Trichloroethene	<1.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
Vinyl chloride	<10.	ug/L
Xylenes, Total	<1.0	ug/L
PCB's		
PCB-1016	<1.0	ug/L
PCB-1221	<1.0	ug/L
PCB-1232	<1.0	ug/L
PCB-1242	<1.0	ug/L
PCB-1248	<1.0	ug/L
PCB-1254	<1.0	ug/L
PCB-1260	<1.0	ug/L

William H. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL
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NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180

Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-20-88

Sample No.: 65212

Sample Description: 2-B; 2
AMCA

Date Taken: 06-23-88 0830

Date Received: 06-24-88 1245

Solids, Total	86.29	%

Results on a dry weight basis.

William H. Mottashed, Manager
Bartlett Division

NATIONAL
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Fax: 312-289-4180

Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-20-88

Sample No.: 65212

Sample Description: 2-B; 2
AMCA

Date Taken: 06-23-88 0830

Date Received: 06-24-88 1245

VOLATILE COMPOUNDS

Acrolein	<10.	ug/g
Acrylonitrile	<10.	ug/g
Benzene	<1.0	ug/g
Bromodichloromethane	<1.0	ug/g
Bromoform	<1.0	ug/g
Bromomethane	<10.	ug/g
Carbon tetrachloride	<1.0	ug/g
Chlorobenzene	<1.0	ug/g
Chloroethane	<10.	ug/g
2-Chloroethylvinyl ether	<1.0	ug/g
Chloroform	<1.0	ug/g
Chloromethane	<10.	ug/g
Dibromochloromethane	<1.0	ug/g
1,2-Dichlorobenzene	<1.0	ug/g
1,3-Dichlorobenzene	<1.0	ug/g
1,4-Dichlorobenzene	<1.0	ug/g
1,1-Dichloroethane	<1.0	ug/g
1,2-Dichloroethane	<1.0	ug/g
1,1-Dichloroethene	<1.0	ug/g
cis-1,2-Dichloroethene	<1.0	ug/g
trans-1,2-Dichloroethene	<1.0	ug/g
1,2-Dichloropropane	<1.0	ug/g
cis-1,3-Dichloropropene	<1.0	ug/g
trans-1,3-Dichloropropene	<1.0	ug/g
Ethyl benzene	<1.0	ug/g

Results on a dry weight basis.

W. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180

Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-20-88

Sample No.: 65212

Sample Description: 2-B; 2
AMCA

Date Taken: 06-23-88 0830

Date Received: 06-24-88 1245

Methylene chloride	<5.0	ug/g
1,1,2,2-Tetrachloroethane	<1.0	ug/g
Tetrachloroethene	<1.0	ug/g
Toluene	<1.0	ug/g
1,1,1-Trichloroethane	<1.0	ug/g
1,1,2-Trichloroethane	<1.0	ug/g
Trichloroethene	<1.0	ug/g
Trichlorofluoromethane	<1.0	ug/g
Vinyl chloride	<10.	ug/g
Xylenes, Total	<1.0	ug/g

Results on a dry weight basis.

W. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL
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Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
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Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-21-88

Sample No.: 65017

Sample Description: 4-E; 4
AMCA

Date Taken: 06-20-88 0930

Date Received: 06-21-88 0945

Solids, Total	85.54	%

Results on a dry weight basis.

William H. Mottashed, Manager
Bartlett Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Bartlett Division
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Bartlett, IL 60103
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Fax: 312-289-4180

Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-21-88

Sample No.: 65017

Sample Description: 4-E; 4
AMCA

Date Taken: 06-20-88 0930

Date Received: 06-21-88 0945

VOLATILE COMPOUNDS

Acrolein	<10.	ug/g
Acrylonitrile	<10.	ug/g
Benzene	<1.0	ug/g
Bromodichloromethane	<1.0	ug/g
Bromoform	<1.0	ug/g
Bromomethane	<10.	ug/g
Carbon tetrachloride	<1.0	ug/g
Chlorobenzene	<1.0	ug/g
Chloroethane	<10.	ug/g
2-Chloroethylvinyl ether	<1.0	ug/g
Chloroform	<1.0	ug/g
Chloromethane	<10.	ug/g
Dibromochloromethane	<1.0	ug/g
1,2-Dichlorobenzene	<1.0	ug/g
1,3-Dichlorobenzene	<1.0	ug/g
1,4-Dichlorobenzene	<1.0	ug/g
1,1-Dichloroethane	<1.0	ug/g
1,2-Dichloroethane	<1.0	ug/g
1,1-Dichloroethene	<1.0	ug/g
cis-1,2-Dichloroethene	<1.0	ug/g
trans-1,2-Dichloroethene	<1.0	ug/g
1,2-Dichloropropane	<1.0	ug/g
cis-1,3-Dichloropropene	<1.0	ug/g
trans-1,3-Dichloropropene	<1.0	ug/g
Ethyl benzene	<1.0	ug/g

Results on a dry weight basis.

W. Mottashed

William H. Mottashed, Manager
Bartlett Division

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Bartlett Division
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Bartlett, IL 60103
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Fax: 312-289-4180

Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-21-88

Sample No.: 65017

Sample Description: 4-E; 4
AMCA

Date Taken: 06-20-88 0930

Date Received: 06-21-88 0945

Methylene chloride	<5.0	ug/g
1,1,2,2-Tetrachloroethane	<1.0	ug/g
Tetrachloroethene	<1.0	ug/g
Toluene	<1.0	ug/g
1,1,1-Trichloroethane	<1.0	ug/g
1,1,2-Trichloroethane	<1.0	ug/g
Trichloroethene	11.6	ug/g
Trichlorofluoromethane	<1.0	ug/g
Vinyl chloride	<10.	ug/g
Xylenes, Total	<1.0	ug/g

Results on a dry weight basis.

W. Mottashed

William H. Mottashed, Manager
Bartlett Division

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180

Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

07-21-88

Sample No.: 64962

Sample Description: 6-E
AMCA

Date Taken: 06-16-88 1345

Date Received: 06-17-88 1600

Solids, Total	79.53	%

Results on a dry weight basis.

William H. Mottashed, Manager
Bartlett Division

ERM-NORTH CENTRAL, INC.

CHAIN OF CUSTODY RECORDS

Project Number: AMCA3P203.2

Project Manager: Jim Pobiel

SAMPLE NUMBER	DATE COLLECTED	TIME	COLLECTED BY:	COMPOSITE	GRAB	NO. OF CONTAINERS	REMARKS
A-1	6-6		Mike Rocke	X		2	HOLD UNTIL NOTIFIED
A-2	"			X		2	" " "
A-3	"			X		2	" " "

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	REMARKS:
Mike Rocke	6-7	1:30		
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	REMARKS:
	6/7/88	3:10	Ken Taylor	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	REMARKS:
Ken Taylor	6/7/88	4:10	Diana Klein	
METHOD OF SHIPMENT:			LABORATORY:	

aqualab inc.

2621 Ridgepoint Austin TX 78754 512-928-8905	850 West Bartlett Rd. Bartlett IL 60103 312-289-3100	222 South Morgan Chicago IL 60607 312-666-4469	3548 35th St. Rockford IL 61109 815-874-2171

CHAIN OF CUSTODY RECORD

Client: ERM | Project: AMCA

Sampler(s): Mike Roche

Number	Sampling Location	Date	Time	Composite	Grab	No. of Bottles	Remarks
6-A	6	6-16	12:40		L		Do Not Run until Notified
6-B	"	"	13:50		L		
6-E	"	"	1:45		L		← Run per Mike 6/17/88 VOA

Relinquished By	Received By	Date	Time
Michael Roche			

RECEIVED
JUL 22 1988
ERM-NORTH CENTRAL, INC.

Shipping Notes

Received For Aqualab By: L. J. Krebs — 6/17/88 — 400

140

aqualab inc.

☐ 2621 Ridgepoint Austin TX 78754 512-928-8905	☐ 850 West Bartlett Rd. Bartlett IL 60103 312-289-3100	☐ 222 South Morgan Chicago IL 60607 312-666-4469	☐ 3548 35th St. Rockford IL 61109 815-874-2171

CHAIN OF CUSTODY RECORD

Client: ERM | Project: AmcA

Sampler(s): Mike Rocha

Number	Sampling Location	Date	Time	Composite	Grab	No. of Bottles	Remarks
4-A	4	6-20	8:30		X		Not Run
4-B	"	"	8:50		X		Not Run
4-C	"	"	9:30		X		Volatile Organic Scan Only

Relinquished By	Received By	Date	Time
Michael Rocha	RECEIVED JUL 22 1988 ERM NORTH CENTRAL		

Shipping Notes	Received For Aqualab By	Date	Time
	L.F. Krebs	6/21/88	945 a.m.

aqualab inc.

2621 Ridgepoint Austin TX 78754 512-928-8905	☐ 850 West Bartlett Rd. Bartlett IL 60103 312-289-3100	☐ 222 South Morgan Chicago IL 60607 312-666-4469	☐ 3548 35th St. Rockford IL 61109 815-874-2171

CHAIN OF CUSTODY RECORD

Client: AMCA ERM

Project:

Sampler(s): Michael E. Roche

Number	Sampling Location	Date	Time	Composite	Grab	No. of Bottles	Remarks
							Do not run until
3-A	3	6-13	8:30		X		notified
3-B	"	"	8:40		X		
3-E	"	"	9:15		X		
5-A	5	6-15	11:30		X		← Run per Mike 6/17/88
5-B	"	"	11:50		X		VOA
5-E	"	"	1:10		X		

Relinquished By	Received By	Date	Time
Michael Roche			

RECEIVED
JUL 22 1988
ERM-NORTH CENTRAL, INC.

Shipping Notes:

Received For Aqualab By: Deana Klein — 6/14/88 — 1645

140

aqualab inc.

2621 Ridgepoint Austin TX 78754 512-928-8905	850 West Bartlett Rd. Bartlett IL 60103 312-289-3100	222 South Morgan Chicago IL 60607 312-666-4469	3548 35th St. Rockford IL 61109 815-874-2171

CHAIN OF CUSTODY RECORD

Client ~~AMOCO~~ ERM

Project AMC A

Sampler(s) Mike Rocke

Number	Sampling Location	Date	Time	Composite	Grab	No. of Bottles	Remarks
2-A	2	6/23	8:20		✓		
2-B	"	"	8:30		✓		Volatiles Sample B only
2-E	"	"	9:00		✓		

Relinquished By	Received By	Date	Time
Michael E. Rocke	RECEIVED JUL 22 1988 ERM-NORTH CENTRAL, INC.	6/24/88	
Shipping Notes	Received For Aqualab By		
	Robin Cloud	6/24/88	12:45

140

aqualab inc.

RECEIVED AUG - 5 1988 ERM-NORTH CENTRAL

- ☐ 2621 Ridgepoint, Austin TX 78754, 512-928-8905
- ☐ 850 West Bartlett Rd., Bartlett IL 60103, 312-289-3100
- ☐ 222 South Morgan, Chicago IL 60607, 312-666-4469
- ~~3548 35th St., Rockford IL 61109~~, 815-874-2171

CHAIN OF CUSTODY RECORD

Client: ERM
Project: AMCA

Sampler(s): Mike Roche - Chris Blume

Number	Sampling Location	Date	Time	Composite	Grab	No. of Bottles	Remarks
well 2	2	6/29	9:15	X		7	Analysis for each set:
well 1	1	6/29	11:30	X		7	Volatile Organic
well 3	3	6/29	1:15	X		7	PCB's
well 6	6	6/29	2:15	X		7	Cyanide, Arsenic,
							Barium, Cadmium,
							Chromium, Copper, Lead,
							Magnesium, Mercury,
							Molybdenum, Nickel,
							Selenium, Zinc,
							Total oil & Grease (Hexane Soluble)

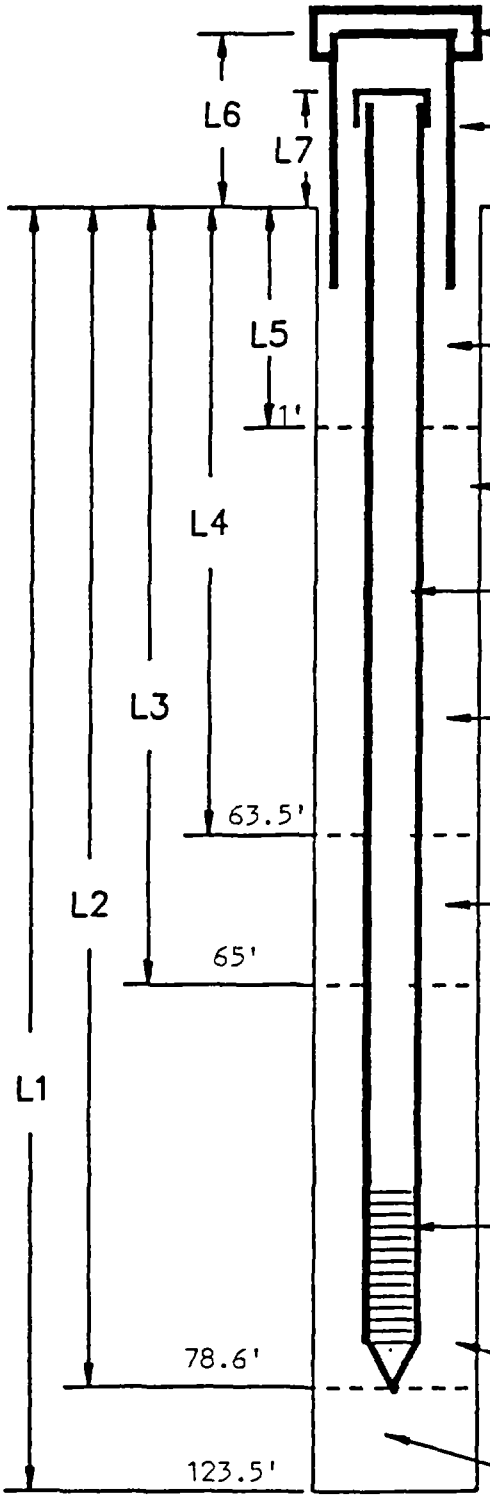
Relinquished By	Received By	Date	Time
Michael Roche			

Shipping Notes	Received For Aqualab By	Date	Time
	Patti Plagge	6/30/88	0870

140

APPENDIX C
MONITORING WELL CONSTRUCTION

MONITORING WELL CONSTRUCTION



CAP Metal with Lock

PROTECTIVE CASING 5' Metal

GROUND SURFACE 754.3'

SURFACE SEAL Concrete

BOREHOLE DIAMETER 6" Auger to 56'
4" Mud Rotary to 123.5'

RISER 80.9' of 2" Sch.80 PVC

ANNULUS FILL Volclay

ANNULUS SEAL Bentonite Pellets

SCREEN ELEV. 685.0'

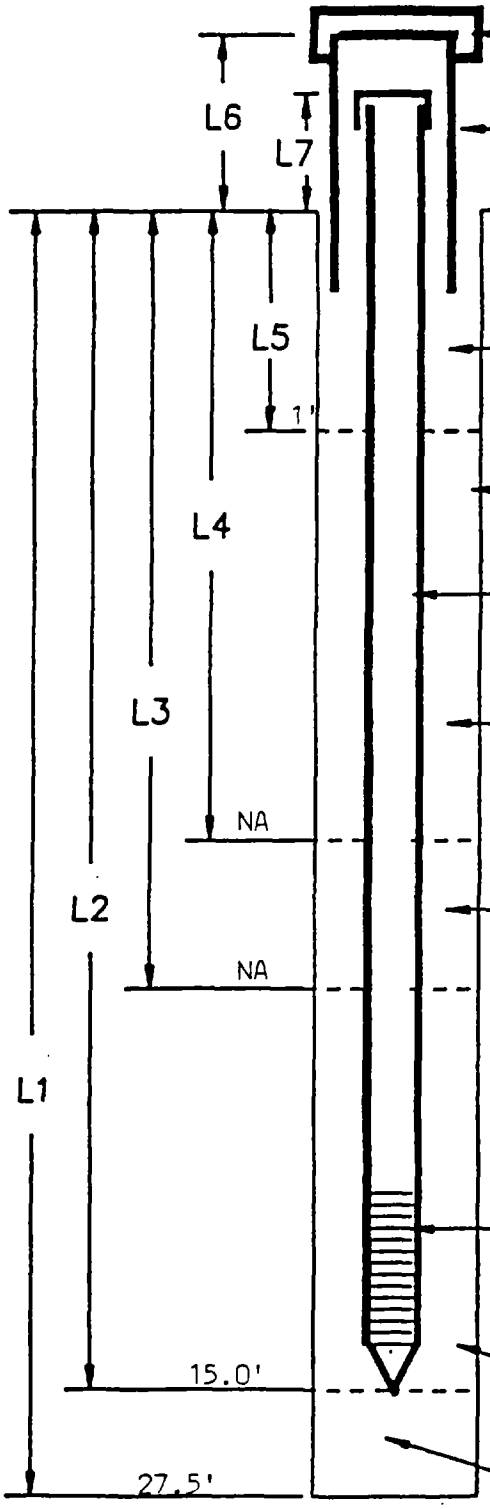
SCREEN 9.3 feet of 2" Schedule 80 PVC, 0.020 Slot Size

FILTER Coarse Sand

BACKFILL/SEAL Coarse Sand

WELL #1	FIGURE
ERM ERM-North Central, Inc.	

MONITORING WELL CONSTRUCTION



CAP Metal with Lock

PROTECTIVE CASING 5' Metal

GROUND SURFACE 753.5'

SURFACE SEAL Concrete

BOREHOLE DIAMETER 11"

RISER 7.6' of 2" Sch. 80 PVC

ANNULUS FILL Coarse Sand

ANNULUS SEAL NA

SCREEN ELEV. 747.8'

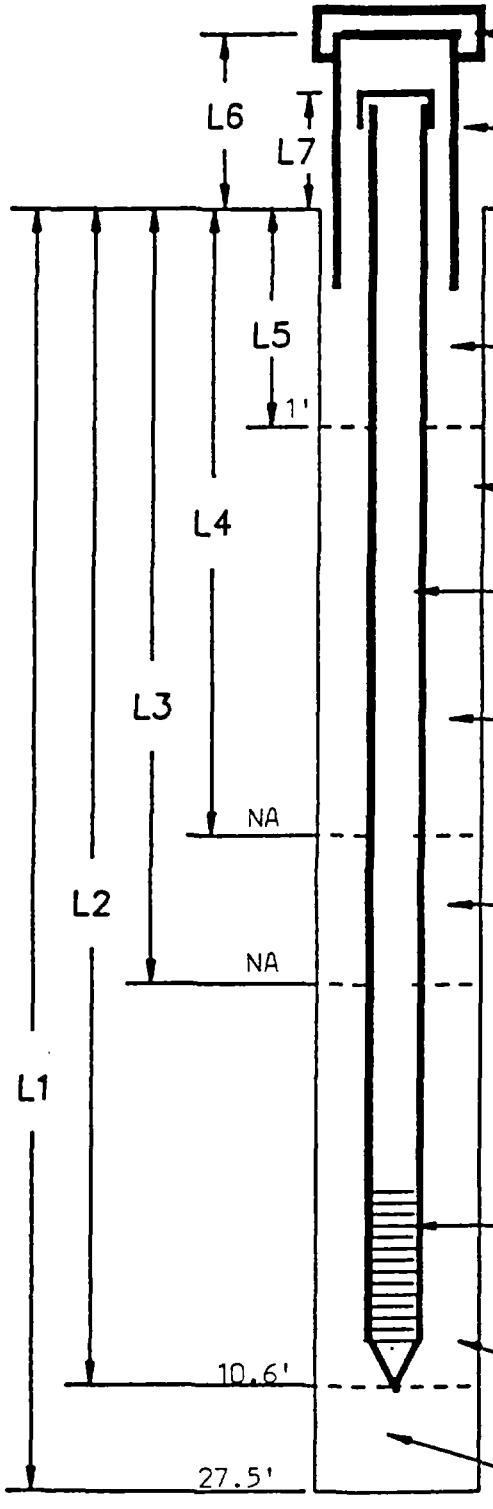
SCREEN 9.3 feet of 2" Schedule 80 PVC, 0.020 Slot Size

FILTER Coarse Sand

BACKFILL/SEAL Coarse Sand with Bentonite Pellets from 16' to 17'

WELL #2	FIGURE
ERM ERM-North Central, Inc.	

MONITORING WELL CONSTRUCTION



CAP Metal with Lock

PROTECTIVE CASING 5' Metal

GROUND SURFACE 744.8'

SURFACE SEAL Bentonite Powder

BOREHOLE DIAMETER 11"

RISER 8.3' of 2" Sch. 80 PVC

ANNULUS FILL Coarse Sand

ANNULUS SEAL NA

SCREEN ELEV. 378.9'

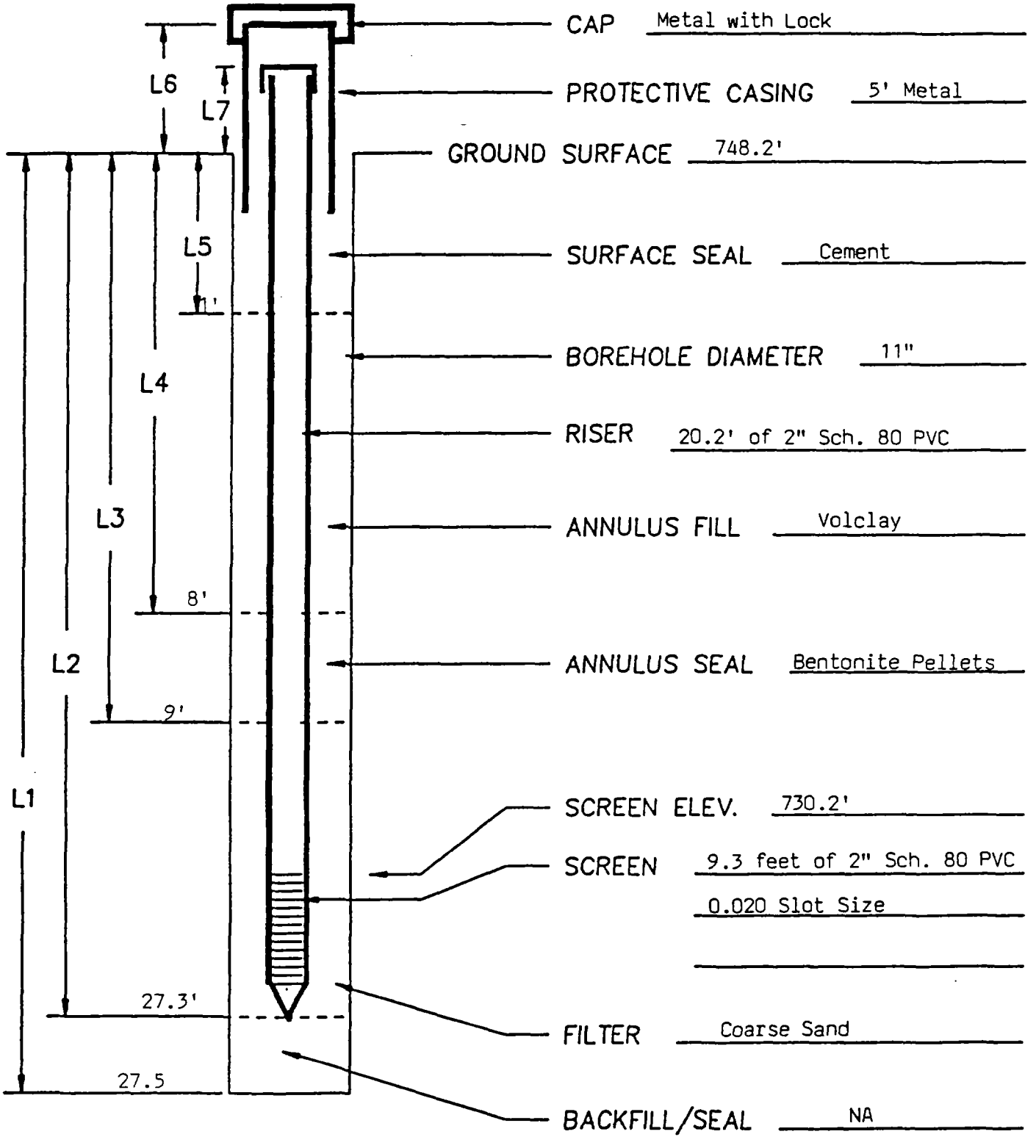
SCREEN 4.7 feet of 2" Sch. 80 PVC
0.020 Slot Size

FILTER Coarse Sand

BACKFILL/SEAL Coarse Sand with Bentonite Pellets from 12' to 14.5'

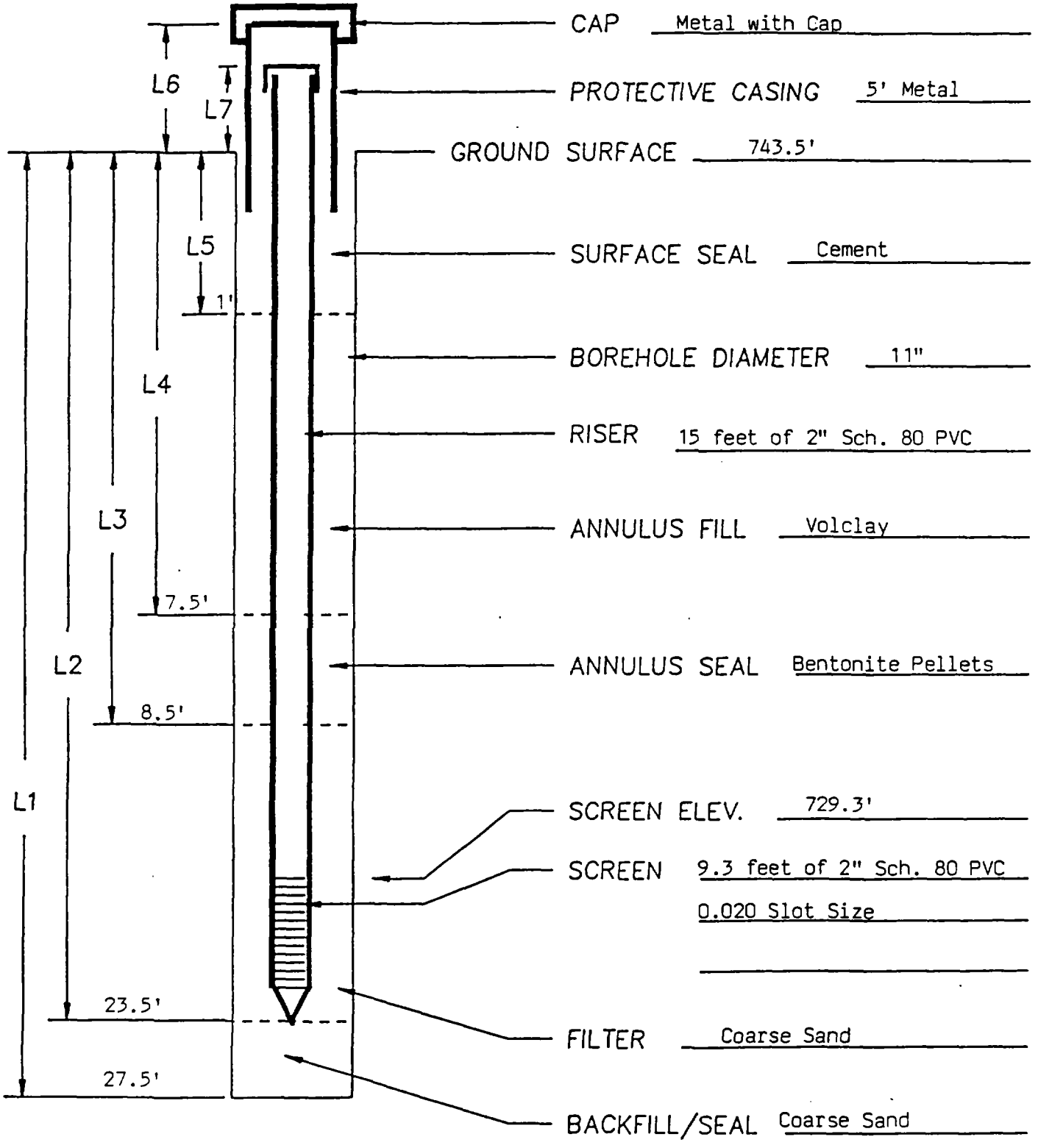
WELL #3	FIGURE
ERM-North Central, Inc.	

MONITORING WELL CONSTRUCTION



WELL #4	FIGURE
ERM ERM-North Central, Inc.	

MONITORING WELL CONSTRUCTION



Well #6	FIGURE
ERM ERM-North Central, Inc.	

APPENDIX D
LABORATORY REPORT FOR SECOND
GROUND WATER SAMPLE FROM
MONITORING WELL NO. 3

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Bartlett Division
850 West Bartlett Road
Bartlett, IL 60103
Tel: (312) 289-3100
Fax: 312-289-4180

Formerly: Aqualab, Inc.

ANALYTICAL REPORT

Mr. Mike Roche
ERM-NORTH CENTRAL, INC.
102 Wilmot Road, Suite 300
Deerfield IL 60015

12-08-88

Sample No.: 71316

Sample Description: W-3-C; W3
AMCA; Park Forest

Date Taken: 11-02-88 1030

Date Received: 11-03-88 1150

PCB's

PCB-1016	<1.0	ug/L
PCB-1221	<1.0	ug/L
PCB-1232	<1.0	ug/L
PCB-1242	<1.0	ug/L
PCB-1248	<1.0	ug/L
PCB-1254	<1.0	ug/L
PCB-1260	<1.0	ug/L

William H. Mottashed, Manager
Bartlett Division

aqualab inc.

☐ 2621 Ridgepoint
Austin TX 78754
512-928-8905

☐ 850 West Bartlett Rd.
Bartlett IL 60103
312-289-3100

☐ 222 South Morgan
Chicago IL 60607
312-666-4469

☐ 3548 35th St.
Rockford IL 61109
815-874-2171

CHAIN OF CUSTODY RECORD

Client: IERM

Project: AMCA Park Forest

Sampler(s): Mike Rocke

Number	Sampling Location	Date	Time	Composite	Grab	No. of Bottles	Remarks
W-3-C	W-3	11-3	10:30		4		PCB's (Hold if there is extra)

Relinquished By	Received By	Date	Time
Michael Rocke			

Shipping Notes	Received For Aqualab By	Date	Time
	L. J. Krebs	11/3/88	11:50

APPENDIX E
MONITORING WELL INSTALLATION AND DECONTAMINATION AUDIT CHECKLISTS AND PERSONAL SAFETY CERTIFICATIONS

DESA INDUSTRIES

PARK FOREST, ILLINOIS
AMCAJP7032

MONITORING WELL INSTALLATION AND DECONTAMINATION AUDIT CHECKLIST

DATE 10 JUN 88 TIME 1100

AUDITOR MJ ANZIA

WELL NUMBER 1 DEPTH COMPLETE

SAMPLING METHODOLOGY CEMENT WAS BEING PLACED AROUND BASE OF WELL. NO SAMPLING

NON-CONFORMITIES WITH WORK PLAN NONE

EQUIPMENT DECONTAMINATION PROCEDURES SET-UP OK

NON-CONFORMITIES WITH WORK PLAN NONE

PERSONNEL DECONTAMINATION PROCEDURES MOVED TO DECON PAD.

NON-CONFORMITIES WITH WORK PLAN NONE

DESA INDUSTRIES

PARK FOREST, ILLINOIS
AMCAJP7032

MONITORING WELL INSTALLATION AND DECONTAMINATION AUDIT CHECKLIST

DATE 7 JUN 88 TIME 1300

AUDITOR MJ ANZIA

WELL NUMBER 1 DEPTH 50 feet

SAMPLING METHODOLOGY SAMPLE EVERY 5 feet

NON-CONFORMITIES WITH WORK PLAN NONE

EQUIPMENT DECONTAMINATION PROCEDURES DECON SPLIT SPOONS ON DRILL PLATFORM

NON-CONFORMITIES WITH WORK PLAN NONE

PERSONNEL DECONTAMINATION PROCEDURES WASH AND RINSE BOOTS AND GLOVES. HAND WASH. AT END OF DAY HAND AND FACE WASH.

NON-CONFORMITIES WITH WORK PLAN NONE

ATTACHMENT 5.1

PERSONNEL SAFETY CERTIFICATION

Safety Plant Certification

All project personnel are required to make the following certification prior to conducting work at the AMCA Park Forest Property.

I Chris Blume certify that:

1. I have read and understand the Project Safety Plan, and that
2. I will abide by the provisions of the Project Safety Plan.
3. I have attended the Project Safety Training program provided by ERM-North Central.

Christopher J. Blume
Signature

6-23-88
Date

ATTACHMENT 5.1

PERSONNEL SAFETY CERTIFICATION

Safety Plant Certification

All project personnel are required to make the following certification prior to conducting work at the AMCA Park Forest Property.

I MARY JO ANZIA certify that:

1. I have read and understand the Project Safety Plan, and that
2. I will abide by the provisions of the Project Safety Plan.
3. I have attended the Project Safety Training program provided by ERM-North Central.

Mary Jo Anzia
Signature

6/3/88
Date

ATTACHMENT 5.1

PERSONNEL SAFETY CERTIFICATION

Safety Plant Certification

All project personnel are required to make the following certification prior to conducting work at the AMCA Park Forest Property.

I Michael E. Rocke certify that:

1. I have read and understand the Project Safety Plan, and that
2. I will abide by the provisions of the Project Safety Plan.
3. I have attended the Project Safety Training program provided by ERM-North Central.

Michael E. Rocke
Signature

6-3-88
Date

ATTACHMENT 5.1

PERSONNEL SAFETY CERTIFICATION

Safety Plant Certification

All project personnel are required to make the following certification prior to conducting work at the AMCA Park Forest Property.

I Norm Eger certify that:

1. I have read and understand the Project Safety Plan, and that
2. I will abide by the provisions of the Project Safety Plan.
3. I have attended the Project Safety Training program provided by ERM-North Central.

Signature

6.3.88

Date

ATTACHMENT 5.1

PERSONNEL SAFETY CERTIFICATION

Safety Plant Certification

All project personnel are required to make the following certification prior to conducting work at the AMCA Park Forest Property.

I Bernie Cragg certify that:

1. I have read and understand the Project Safety Plan, and that
2. I will abide by the provisions of the Project Safety Plan.
3. I have attended the Project Safety Training program provided by ERM-North Central.

Bernard D. Cragg
Signature

5/3/88
Date

Certificate of Completion

This is to certify that

Mr. Norm Eger

has completed the

RCRA/CERCLA Compliance and Hazard Communication 40-Hour Training Program

presented by Carnow, Conibear & Associates, Ltd., for

Fox Drilling, Inc.

Rod Musselman, Dr. P.H.	June 5-8, 1987	
PROGRAM DIRECTOR	DATE	PRESIDENT

CARNOW, CONIBEAR & ASSOCIATES, LTD.

Occupational and Environmental Health Consultants

Certificate of Completion

This is to certify that

Mr. Bernard G. Crachy

has completed the

RCRA/CERCLA Compliance and Hazard Communication 40-Hour Training Program and has been fitted for Level C respiratory protection and trained to Level B protection.

presented by Carnow, Conibear & Associates, Ltd., for

Fox Drilling, Inc.

Rod Musselman, Dr. P.H.	June 5,6,8, 28, 1987	
PROGRAM DIRECTOR	DATE	PRESIDENT

CARNOW, CONIBEAR & ASSOCIATES, LTD.

Occupational and Environmental Health Consultants